IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re:	**Hogan, Karen**	**Atty Docket:**	**22660-RA**
Serial No.:	**10/667,680**	**Examiner:**	**PRICE JR., Richard T.**
Filed:	**September 22, 2003**	**Group Art:**	**3643**
For:	**Apparatus and Method For Preparing Food**		

Mail Stop: Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

January 14, 2008

APPLICANT'S APPEAL BRIEF

Dear Sir:

Pursuant to the Notice of Appeal filed October 12, 2007, Applicant hereby appeals to the Board of Patent Appeals and Interferences from the decision of the Examiner, made final, having a mailing date of July 16, 2007 rejecting claims 1-30 in the above-referenced application.

Please find enclosed a Petition for a one (1) month Extension of Time (Form SB/22) and the requisite fees, taking into account Applicant's claim of "small entity" status.

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Teri L. Bonica
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January 14, 2008
Date

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I. REAL PARTY IN INTEREST

The real party in interest is Karen Hogan, an individual residing at 1745 Prodan Lane, Virginia Beach, VA 23456, sole inventor and undivided owner of the above-referenced patent application and of the invention disclosed therein.

II. RELATED APPEALS AND INTERFERENCES

Applicant is not aware of any related appeals or interferences which may have a bearing on a decision in the instant appeal.

III. STATUS OF CLAIMS

Claims 1-30 are pending in the application. Each of claims 1-30 stands rejected as detailed in the final Office Action, mailed July 16, 2007. Applicant hereby appeals the final rejection of each of claims 1-30.

IV. STATUS OF AMENDMENTS

No amendments to the claims have been made subsequent to the mailing of the final Office Action; thus, the claims stand as amended in Applicant's response to Office Action dated April 19, 2007. A listing of the currently pending claims is provided in Section VIII of the instant Appeal Brief.

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention, as recited in independent claims 1, 15, and 25 is a food tenderizing and marinating bag and a method of use thereof. More specifically, and with reference to Figures 1-3 of the application, and to pages 14-18 of the written description, the food tenderizing and marinating bag **20** includes a plurality of pointed protrusions or tenderizing

teeth **40** disposed on an interior surface of bag **20**. Bag **20** is preferably flexible and defines a re-sealable interior pocket for containing one or more food item and a liquid marinade.

Bag **20** may preferably be used to tenderize and/or marinate a food item, such as piece of meat **M**, by sealing the food item, with or without marinade, within bag **20**. Bag **20** may then be struck or pressed, either by hand or using a tool, to drive tenderizing teeth **40** into the food item to tenderize same. Where marinade is used, the tenderizing process preferably further introduces the marinade to the interior of the food item via tenderizing teeth **40**.

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The following grounds of rejection are presented for review:

1. Claims 1-29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement;
2. Claims 1-4, 6, and 9-11 are rejected under 35 U.S.C. 102(b) as being anticipated by United States Patent No. 2,778,173 to Taunton;
3. Claims 5, 7, 8, 19, 21-23, and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 2,778,173 to Taunton in view of United States Patent No. 6,212,716 to Logan, Jr., *et al.*; and
4. Claims 14-18, 20, 21, and 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over United States Patent No. 2,778,173 to Taunton alone.

United States Patent No. 2,778,173 to Taunton and United States Patent No. 6,212,716 to Logan, Jr., *et al.* are attached hereto for reference as Exhibits A and B in the Evidence Appendix.

VII. ARGUMENT

Ground 1, rejection of claims 1-29[1]

In making the rejection of claims 1-30 under 35 U.S.C. 112, first paragraph, the Examiner contends that the claimed protuberances, i.e. protuberances that are sufficiently rigid to deform and/or penetrate the external surface of a food item, such as meat, were not described in the specification in a way so as to reasonably convey to one skilled in the art that Applicant had possession of the claimed invention. Reviewing the relevant standard, an applicant shows possession of the claimed invention by describing the claimed invention with all of its limitations using such descriptive means as words, structures, figures, diagrams, and formulas that fully set forth the claimed invention. *Lockwood v. American Airlines, Inc.*, 107 F.3d 1565, 1572, 41 USPQ2d 1961, 1966 (Fed. Cir. 1997). MPEP 2163.

Applicant respectfully submits that the claimed subject matter, i.e. a food tenderizing and marinating bag having protuberances of sufficient rigidity to *tenderize a food item*, was adequately described in the written description, at least at page 17, where **Applicant described use of the disclosed invention as involving the step of "forcefully driv[ing] the plurality of tenderizing teeth 40 *into meat M*, and thus tenderiz[ing] same"** and at page 16, where **Applicant described use of the teeth to "pierce the meat or other food item."** Applicant respectfully submits that the difference between the language selected for the claims, i.e. deform and penetrate, and that employed in the specification has no effect on relevant inquiry of whether Applicant was, at the time of filing, in possession of the claimed invention. Anyone having

[1] The Office Action stated that claims 1-29 are pending, and that claims 1-29 are rejected under 35 U.S.C. 112, first paragraph. Applicant notes, however, that claims 1-30 are pending. Accordingly, Applicant understands that the Examiner intended to reject each of claims 1-30 as failing to comply with the written description requirement.

ordinary skill in the relevant art would have understood from the described use of the invention that the tenderizing teeth (claimed as protuberances, found in the specification at pages 16 and 17) must be sufficiently rigid to penetrate and/or deform the food item in order to accomplish such use.

Thus, since Applicant's claimed invention was adequately described in the specification, as originally filed, Applicant respectfully requests the withdrawal of the rejection of claims 1-30 under 35 U.S.C. 112, first paragraph.

Ground 2, Rejection of Claims 1-4, 6, and 9-11

Claim 1

To support a rejection under 35 U.S.C. §102(b), "The identical invention must be shown in as complete detail as is contained in the...claim," *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236 (Fed. Cir. 1989), MPEP 2131.02. However, United States Patent No. 2,778,173 to Taunton (hereinafter "Taunton") does NOT show a bag comprising a mechanical tenderizing surface disposed therewithin, as required by claim 1. Instead, Taunton teaches a vacuum bag for storing food items with a reduced amount of air trapped with the bag. *See*, for example, the title, col. 3 describing the air evacuation process, and the claims of Taunton.

Inasmuch as Taunton merely teaches ridges for facilitating evacuation of air from the bag, Taunton utterly fails to describe any food tenderizing whatsoever. Furthermore, Taunton explicitly describes the bag as being formed from a flexible film **1** of material with projections **12** formed therein by pressing the film between to complimentary heated dies. *See* col. 3, lines

32-67. As such, and as further clarified by **Figs. 6a-e and 9a-b**, each projection **12** of Taunton constitutes nothing more than a corrugation or other depression of flexible film 1. Therefore, each projection **12** is completely incapable of performing the claimed food tenderizing function of Applicant's invention. The Examiner's suggestions to the contrary, specifically that the projections of Taunton "broadly read on a mechanical tenderizing surface," are, quite frankly, preposterous. There is simply no way that one can reasonably construe the flexible film of Taunton, even when formed into projections, to anticipate the claimed protuberances of Applicant's food tenderizing bag.

Inasmuch as Taunton fails to teach the elements of claim 1, Taunton necessarily further fails to teach the additional elements of claims 2-4, 6, and 9-11. Thus, at least for the reasons stated above, claims 1-4, 6, and 9-11 are patentable over Taunton.

Ground 3, Rejection of Claims 5, 7, 8, 19, 21-23, and 27-30

Claims 5, 7, and 8

When making a rejection under 35 U.S.C. 103(a), "the examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness." MPEP 2142. In this case, since the Examiner failed to establish where the claim limitations are taught by Taunton, Applicant can only assume that the Examiner relies on the interpretation used to reject claim 4, discussed *supra*. As such, Applicant reiterates that Taunton fails to teach at least a food tenderizing surface. Thus, since Logan likewise fails to teach such a food tenderizing surface, the Examiner has failed to establish a *prima facie* case of obviousness.

Claims 19 and 21-23

As discussed above, with respect to claims 5, 7, and 8, the Examiner has failed to recite where the claim limitations are taught by Taunton. Unlike claims 5, 7, and 8, however, claims 19 and 21-23 do not depend from rejected claims. Accordingly, the Examiner has failed, per se, to establish a *prima facie* case of obviousness. Nonetheless, Applicant respectfully submits that no *prima facie* case of obviousness could fairly be established based on a combination of Taunton and Logan. Specifically, Taunton and Logan each fail to teach the claimed tenderizing surface having rigid protuberances of independent claim 15, from which claims 19 and 21-23 depend, directly or indirectly.

Claims 27-30

As with claims 19 and 21-23, the Examiner has rejected claims 27-30 as being unpatentable over Taunton in view of Logan without rejecting the independent claim from which claims 27-30 depend, directly or indirectly. Similarly, Applicant respectfully submits that such failure is, in some respects, inconsequential inasmuch as Taunton and Logan each fail to teach a bag comprising a mechanical tenderizing surface comprising a plurality of protuberances, as claimed in independent claim 25.

Additionally, Applicant notes that the Examiner contends, at page 3, that "it is well known in the art to one of ordinary skill in the art at the time the invention was made to user [sic] one's hand to hit a food item for [the] purpose of tenderizing the food item." Applicant strenuously contests such assertion, and respectfully requests that the Examiner establish where such methodology is shown in the art, because applicant is unaware of any prior art that would support the Examiner's contention. Nonetheless, the Examiner has missed the point; Applicant

has not claimed striking a food item with a bare hand, but rather has claimed driving the teeth of the tenderizing surface of the claimed bag into the food item using a tool or a bare hand. Thus, even if the Examiner's contention were correct, it fails anticipate or render obvious Applicant's claimed method.

Ground 4, rejection of claims 14-18, 20, 21, and 24-26

Claims 14 and 24

As to Claims 14 and 24, despite admitting that Taunton fails to "discuss the use of a drain spout attached to the bag", the Examiner contends that it would have been obvious to include such a drain spout in order to allow a user to remove unwanted fluids from the bag. The Examiner has clearly relied on impermissible hindsight reconstruction in formulating rejection, which constitutes nothing more than a bald assertion. By failing to establish where the claimed stoppered drainage spout is taught in the prior art, the Examiner has not only failed to establish a *prima facie* case of obviousness, but has necessarily relied on the only teaching of a stoppered drainage spout present in the record, i.e. Applicant's teaching of a stoppered drainage spout.

Claims 15-18, 20, 21, 25, and 26

With respect to claims 15-18, 20, 21, 25, and 26, the Examiner has failed to establish a *prima facie* case of obviousness because the Examiner has not established which elements of the claimed invention are taught by Taunton, and where, which elements are not taught by Taunton, where the missing elements are taught, and how one of ordinary skill in the art would have modified the vacuum bag of Taunton to arrive at Applicant's claimed food tenderizing bag.

Applicant's respectfully submit that such a *prima facie* case of obviousness could not properly be established based on Taunton because **Taunton fails to teach anything to do with food tenderizing**. Thus, there is no way that one of ordinary skill in the art would have made any modification to Taunton to include food tenderizing protuberances without Applicant's teaching.

Conclusion

Taunton simply fails to teach the specific apparatus and method of Applicant's claimed invention. Taunton relates to vacuum packaging, while Applicant's invention is a food tenderizing bag and a method of use thereof. One of ordinary skill in the art would not look to Taunton when endeavoring to create a food tenderizing bag, and even if one of ordinary skill in the art did refer to Taunton, they would not find any valuable teachings for tenderizing food. The Examiner has failed to establish where any teaching of food tenderizing bag exists in the prior art, and has provided only the feeblest articulation supporting a conclusion of obviousness. Thus, at least for the foregoing reasons, Applicant respectfully submits that each of claims 1-30, as currently pending, is allowable over the cited prior-art references.

Applicant has submitted the requisite fees as appropriate; however, if the Commissioner of Patents determines that additional fees are due, the Commissioner is authorized to charge **only** the deficient fees or credit any overpayments to USPTO Deposit Account No. **50-4428**.

Signature Follows

Respectfully submitted this 14th day of January, 2008.

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VIII. CLAIMS APPENDIX

The following is a listing of the claims involved in the instant appeal.

1. (Previously Presented) An apparatus and method for selectively or contemporaneously tenderizing and marinating meats or other selected food items, said apparatus comprising:

a bag comprising a mechanical tenderizing surface disposed therewithin,

wherein said mechanical tenderizing surface comprises a plurality of protuberances, and

wherein said protuberances are sufficiently rigid to at least one of deform and penetrate an external surface of the meat or other selected food item disposed within said bag, and to thereby tenderize same.

2. (Original) The apparatus of Claim 1, wherein said bag is formed from a non-porous plastic.

3. (Original) The apparatus of Claim 1, wherein said bag is reversible or invertible.

4. (Original) The apparatus of Claim 1, wherein said bag comprises at least one opening.

5. (Original) The apparatus of Claim 4, wherein said at least one opening is selectively sealable via a repeatably resealable mechanism selected from the group consisting of rib-and-groove mechanisms, ties, snap mechanisms, hook-and-loop fasteners, zippers, grommet-and-tie assemblies, and rib-and-groove mechanisms incorporating slide bars to facilitate cooperative engagement of the rib-and-groove mechanism.

6. (Original) The apparatus of Claim 4, further comprising at least one sealed side.

7. (Original) The apparatus of Claim 6, wherein said at least one sealed side is selected from the group consisting of hermetically sealed sides, single-seamed sides, and pleated sides.

8. (Original) The apparatus of Claim 4, further comprising at least one selectively sealable side comprising a repeatably resealable mechanism selected from the group consisting of rib-and-groove mechanisms, ties, snap mechanisms, hook-and-loop fasteners, zippers, grommet-and-tie assemblies, and rib-and-groove mechanisms incorporating slide bars to facilitate cooperative engagement of the rib-and-groove mechanism.

9. (Original) The apparatus of Claim 1, wherein said mechanical tenderizing surface is integrally formed with said bag.

10. (Previously Presented) The apparatus of Claim 9, wherein said protuberances are selected from the group consisting of tenderizing teeth, "blunted" pyramidal-shaped tenderizing teeth, spikes of any selected angular dimension, rounded protuberances, dulled protuberances, tenderizing teeth of varying or alternating size, tenderizing teeth of varying or alternating height, tenderizing teeth of varying or alternating thickness, tenderizing teeth of varying or alternating angular dimension, tenderizing teeth of varying or alternating dispersion, tenderizing teeth of varying or alternating concentration, tenderizing teeth of varying or alternating pattern, tenderizing teeth of varying or alternating grouping, flat tenderizing surfaces, and combinations thereof.

11. (Original) The apparatus of Claim 9, wherein said mechanical tenderizing surface is at least partially disposed on at least one inner surface of said bag.

12. (Original) The apparatus of Claim 1, wherein said mechanical tenderizing surface is in the form of a removably interchangeable tenderizing plate, said tenderizing plate comprising a mechanical tenderizing surface at least partially disposed thereon.

13. (Previously Presented) The apparatus of Claim 12, wherein said protuberances are selected from the group consisting of tenderizing teeth, "blunted" pyramidal-shaped tenderizing teeth, spikes of any selected angular dimension, rounded protuberances, dulled protuberances, tenderizing teeth of varying or alternating size, tenderizing teeth of varying or alternating height, tenderizing teeth of varying or alternating thickness, tenderizing teeth of varying or alternating angular dimension, tenderizing teeth of varying or alternating dispersion, tenderizing teeth of varying or alternating concentration, tenderizing teeth of varying or alternating pattern, tenderizing teeth of varying or alternating grouping, flat tenderizing surfaces, and combinations thereof.

14. (Original) The apparatus of Claim 1, further comprising a stoppered drainage spout carried by said bag.

15. (Previously Presented) An apparatus and method for selectively or contemporaneously tenderizing and marinating meats or other selected food items, said apparatus comprising:

a bag comprising a mechanical tenderizing surface at least partially disposed on and integrally formed with at least one inner surface of said bag,

wherein said mechanical tenderizing surface comprises a plurality of protuberances extending from said at least one inner surface of said bag, and

wherein said protuberances are sufficiently rigid to at least one of deform and penetrate an external surface of the meat or other selected food item disposed within said bag, and to thereby tenderize at least the external surface of the meat or other selected food item.

16. (Original) The apparatus of Claim 15, wherein said bag is formed from a non-porous plastic.

17. (Original) The apparatus of Claim 15, wherein said bag is reversible or invertible.

18. (Original) The apparatus of Claim 15, wherein said bag comprises at least one opening.

19. (Original) The apparatus of Claim 18, wherein said at least one opening is selectively sealable via a repeatably resealable mechanism selected from the group consisting of rib-and-groove mechanisms, ties, snap mechanisms, hook-and-loop fasteners, zippers, grommet-and-tie assemblies, and rib-and-groove mechanisms incorporating slide bars to facilitate cooperative engagement of the rib-and-groove mechanism.

20. (Original) The apparatus of Claim 18, further comprising at least one sealed side.

21. (Original) The apparatus of Claim 20, wherein said at least one sealed side is selected from the group consisting of hermetically sealed sides, single-seamed sides, and pleated sides.

22. (Original) The apparatus of Claim 18, further comprising at least one selectively sealable side comprising a repeatably resealable mechanism selected from the group consisting of rib-and-groove mechanisms, ties, snap mechanisms, hook-and-loop fasteners, zippers, grommet-and-tie assemblies, and rib-and-groove mechanisms incorporating slide bars to facilitate cooperative engagement of the rib-and-groove mechanism.

23. (Previously Presented) The apparatus of Claim 15, wherein said protuberances are selected from the group consisting of tenderizing teeth, "blunted" pyramidal-shaped tenderizing teeth, spikes of any selected angular dimension, rounded protuberances, dulled protuberances, tenderizing teeth of varying or alternating size, tenderizing teeth of varying or alternating height, tenderizing teeth of varying or alternating thickness, tenderizing teeth of varying or alternating

angular dimension, tenderizing teeth of varying or alternating dispersion, tenderizing teeth of varying or alternating concentration, tenderizing teeth of varying or alternating pattern, tenderizing teeth of varying or alternating grouping, flat tenderizing surfaces, and combinations thereof.

24. (Original) The apparatus of Claim 15, further comprising a stoppered drainage spout carried by said bag.

25. (Previously Presented) A method of selectively or contemporaneously tenderizing and marinating meats or other desired food items without the proliferation of harmful bacteria resulting from the leakage and/or splatter of raw meat juices, particulate, or the like, said method comprising the steps of:

a. obtaining a bag comprising a mechanical tenderizing surface disposed therewithin, said mechanical tenderizing surface comprising a plurality of protuberances, said protuberances extending generally perpendicularly from a surface;

b. placing the meat or other desired food item within said bag for tenderizing same; and

c. at least one of deforming and penetrating an external surface of the meat or other desired food item to tenderize at least the external surface of the meat or other desired food item.

26. (Original) The method of Claim 25, further comprising the step of selectively introducing a marinade within said bag.

27. (Original) The method of Claim 25, further comprising the step of releasable sealing at least one opening of said bag via a repeatably resealable mechanism carried by said at least on

opening, said repeatably resealable mechanism selected from the group consisting of rib-and-groove mechanisms, ties, snap mechanisms, hook-and-loop fasteners, zippers, grommet-and-tie assemblies, and rib-and-groove mechanisms incorporating slide bars to facilitate cooperative engagement of the rib-and-groove mechanism.

28. (Previously Presented) The method of Claim 27, wherein the step of at least one of deforming and penetrating comprises repeatably striking and pounding said bag via one's palm, fist, or other blunt object, to forcefully drive at least a portion of said protuberances of said mechanical tenderizing surface into the meat or other desired food item to tenderize same.

29. (Previously Presented) The method of Claim 27, wherein said protuberances are selected from the group consisting of tenderizing teeth, "blunted" pyramidal-shaped tenderizing teeth, spikes of any selected angular dimension, rounded protuberances, dulled protuberances, tenderizing teeth of varying or alternating size, tenderizing teeth of varying or alternating height, tenderizing teeth of varying or alternating thickness, tenderizing teeth of varying or alternating angular dimension, tenderizing teeth of varying or alternating dispersion, tenderizing teeth of varying or alternating concentration, tenderizing teeth of varying or alternating pattern, tenderizing teeth of varying or alternating grouping, flat tenderizing surfaces, and combinations thereof.

30. (Original) The method of Claim 29, wherein said mechanical tenderizing surface is at least partially disposed on at least one inner surface of said bag.

IX. EVIDENCE APPENDIX

EXHIBIT A

United States Patent No. 2,778,173 to Taunton. This reference was originally entered in the record by the Examiner in a list of references cited by the Examiner (PTO-892 form) on November 2, 2006, accompanying a non-final Office Action.

Jan. 22, 1957 G. TAUNTON 2,778,173

METHOD OF PRODUCING AIRTIGHT PACKAGES

Filed Aug. 24, 1951 2 Sheets-Sheet 1

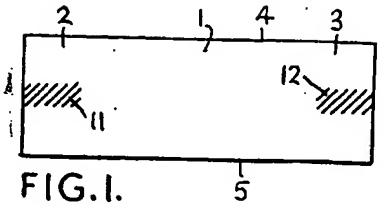

FIG.1.

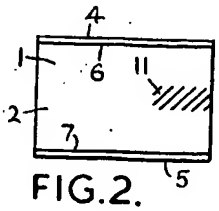

FIG.2.

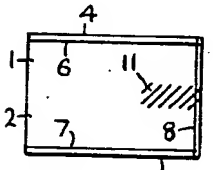

FIG.3.

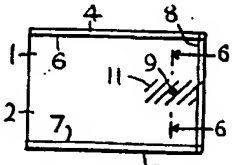

FIG.4.

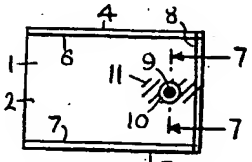

FIG.5.

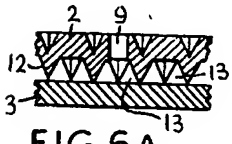

FIG.6A.

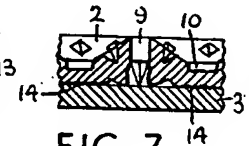

FIG. 7.

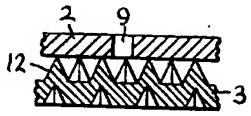

FIG.6B.

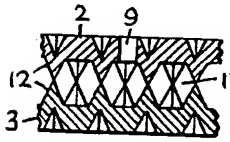

FIG.6C.

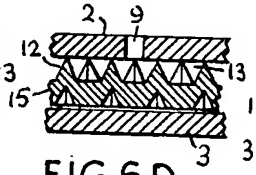

FIG.6D.

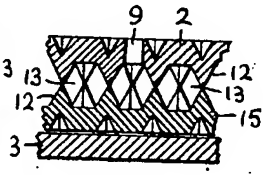

FIG.6E.

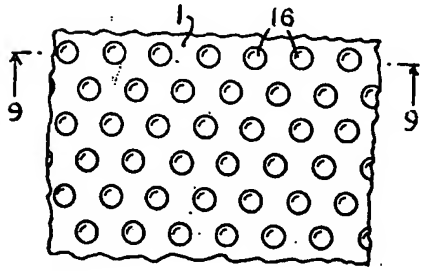

FIG.8.

FIG.9A.

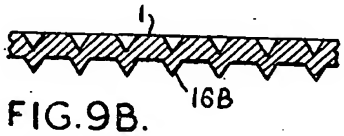

FIG.9B.

Inventor
Gerald Taunton
By Mudael & Jones
Jr

Jan. 22, 1957 G. TAUNTON 2,778,173

METHOD OF PRODUCING AIRTIGHT PACKAGES

Filed Aug. 24, 1951 2 Sheets-Sheet 2

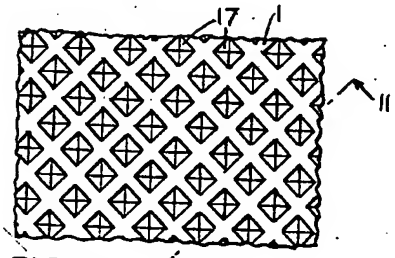

FIG. 10.

FIG. 11.

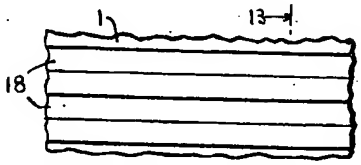

FIG. 12.

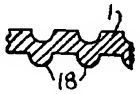

FIG. 13.

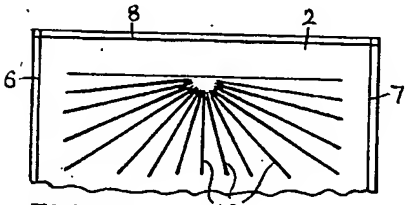

FIG. 14.

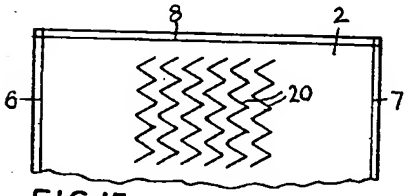

FIG. 15.

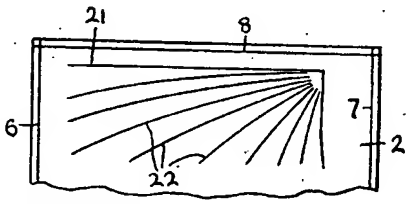

FIG. 16.

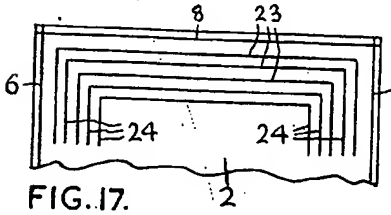

FIG. 17.

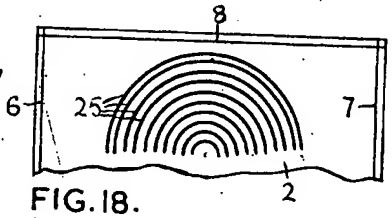

FIG. 18.

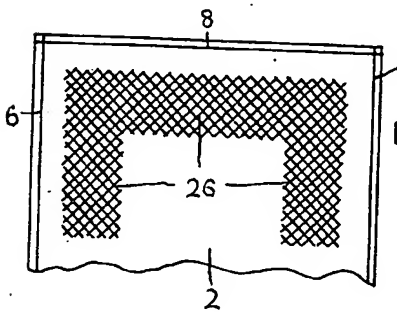

FIG. 19.

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Atty

United States Patent Office 2,778,173 Patented Jan. 22, 1957

2,778,173

METHOD OF PRODUCING AIRTIGHT PACKAGES

Gerald Taunton, Wells, England, assignor to Wilts United Dairies Limited, Trowbridge, England, a British company

Application August 24, 1951, Serial No. 243,515

Claims priority, application Great Britain November 29, 1950

5 Claims. (Cl. 53—22)

This invention relates to the production of airtight packages and in particular to means for facilitating the evacuation of the same.

It has already been proposed to pack cheese and other commodities in flexible oxygen-proof containers from which part or all of the air has been removed.

For example in the specification of application No. 173,071, now Patent Number 2,649,234, there is described a method for reducing the oxygen content of a flexible airtight sealed package, for example a bag or pouch, which comprises the steps of bringing the material of the package, at a part thereof where the inner faces of the material can be brought together without obstruction, into contact with a suction member having an orifice therein, applying suction to said orifice, piercing an exhausting hole in the material through said orifice so that air is withdrawn from the interior of the package, bringing the inner faces of the packaging material into contact with each other in the neighbourhood of said orifice and sealing said faces together so that an airtight seal is effected between the interior of the package and said exhausting hole. It is also possible to use a package in which the exhausting hole has been provided prior to the location of the same adjacent the orifice. Thus a modified method according to the said specification comprises the steps of providing an exhausting hole in the material of the package at a part thereof where the inner faces of the packaging material can be brought together without obstruction, bringing said material into contact with a suction member having an orifice therein so that said exhausting hole communicates with said orifice, applying suction to said orifice so that air is withdrawn from the interior of the package, bringing the inner faces of the packaging material into contact in the neighbourhood of said orifice and sealing said faces together so that an airtight seal is effected between the interior of the package and said exhausting hole. The material of the package may be any suitable oxygen-proof material. Examples of suitable material are waxed sheet material, suitably coated cellulose acetate film, suitably coated regenerated cellulose film, the material known under the registered trademark "Pliofilm," metal foil, and laminated materials, such as "Pliofilm"-cellulose acetate, "Pliofilm"-regenerated cellulose, polyethylene-cellulose acetate, polyethylene-regenerated cellulose, or "Pliofilm"-metal foil. It is preferred to use a material the inner faces of which can be sealed together by the application of heat and pressure in known manner.

With some packaging materials it has been found that there is a tendency for the inner faces of the material to adhere to each other during the process of evacuation, especially in the later stages of the latter and especially in the neighbourhood of the exhausting hole, and this may lead to defective evacuation or to a substantial slowing down of the evacuation process.

One of the objects of the present invention is to avoid the said objection.

According to the present invention a method of producing a flexible airtight sealed package of oxygen-proof packaging material by the partial or complete evacuation of air from the package through an exhausting hole, includes the step of providing, prior to the evacuation process, projections within the package in the neighbourhood of the site for the exhausting hole (i. e. the point at which the exhausting hole is to be made or has been made).

The said projections may be provided on the film or foil (hereinafter referred to as "film") containing the site for the exhausting hole by pressing the film between complementary male and female dies or tools or between a male die and a resilient surface, or they may be similarly provided on the film which is to be brought into contact with said film containing the site for the exhausting hole, or the projections may be similarly provided on both films. The projections may also be formed by other methods. Alternatively, or additionally, a strip of material may be provided with projections and slipped into the package so that it occupies a position beneath the site for the exhausting hole. This strip, which may if required form part of an inner wrapping material, can be of oxygen-proof material which by heat and/or pressure can be made to adhere to the inner surface of the packaging material, so that an airtight seal is effected between the interior of the package and the said hole.

The male and female dies or tools used for forming the projections may be heated, especially when the material to be impressed is thermoplastic. The heating softens the material so that the projections are more easily formed and retained. If the dies or tools are not heated, there is a possibility that the material may be damaged or that the impressed projections may at least partly flatten out when the dies or tools are removed, due to the natural resiliency of the material.

When a strip of material provided with projections is inserted beneath the film containing the site for the exhausting hole, the subsequent sealing may be carried out so that it seals the said strip to the said film or, if desired, so that it seals the strip to both of the films between which it is situated.

The projections may take any desired form. For example they may be in the form of a plurality of substantially hemispherical, conical or pyramidal protuberances, or of a plurality of ridges which may be in the form of parallel or radiating, straight, curved or zig-zag lines.

The projections may be confined to a small area in the immediate neighbourhood of the site for the exhausting hole or they may extend over a wider area and may even extend over the entire area of one or both sides of the package. It is preferred that the area of the projections should at least extend from the vicinity of the site for the exhausting hole to the nearest part of the package occupied by the commodity.

When the commodity to be packed in the package is of a pulverulent or granular nature, the distance between adjacent projections is preferably such that while permitting free passage of the air being exhausted from the package, it prevents the passage of the commodity itself. In this way the projections form a kind of strainer or filter which prevents the commodity from being drawn into the immediate vicinity of the exhausting hole where it might give rise to a defective seal or clog the suction device or reduce the amount of commodity in the package.

The projections according to this invention provide a

plurality of air passages leading to the exhausting hole so that the desired degree of evacuation is attained more rapidly than would otherwise be the case, and in the case of packaging materials which would tend to adhere together, the projections render possible an evacuation where it might otherwise have been difficult or impossible.

The invention will now be further described with reference to the accompanying drawings which are given by way of example.

In the drawings:

Figures 1 to 5 illustrate diagrammatically the steps in one method of forming an airtight sealed package,

Figures 6A to 6E are enlarged sections on the line 6—6 of Figure 4 indicating various possible arrangements of the projections,

Figure 7 is an enlarged section on the line 7—7 of Figure 5 showing the films of Figure 6A after sealing,

Figure 8 is an enlarged plan view of a portion of film showing alternative forms of projections,

Figures 9A and 9B are sections on the line 9—9 of Figure 8,

Figure 10 is an enlarged plan view of a portion of film showing a further form of projections,

Figure 11 is a section on the line 11—11 of Figure 10,

Figure 12 is an enlarged plan view of a portion of film showing another form of projections,

Figure 13 is a section on the line 13—13 of Figure 12, and

Figures 14 to 19 illustrate diagrammatically parts of sealed packages showing various configurations of projections.

Referring first to Figures 1 to 5, Figure 1 represents a rectangular strip of airtight flexible oxygen-proof material in the form of a film 1. In Figure 2, the left-hand portion 2 of the film 1 of Figure 1 has been folded over the right-hand portion 3 and the edges 4, 5 sealed in any suitable way along lines 6, 7 to form a bag or pouch open at the right-hand end. In Figure 3 the pouch has been closed by sealing the open end thereof along line 8, after the desired commodity (not shown) has been inserted into the pouch. In Figure 4 the upper film 2 has been provided with an exhausting hole 9 through which air can be withdrawn from the pouch to any desired extent. In Figure 5 an annular seal 10 has been provided around the exhausting hole 9 to seal off the pouch from the atmosphere. All of these operations may be performed in the manner described in the specification above referred to. The exhausting hole may, of course, be provided in the film 1 at the stage represented by Figure 1, if desired.

According to the present invention, projections are provided in the vicinity of the site for the exhausting hole 9. These projections may be provided on the film 1 in the area indicated by shading 11, in the area indicated by shading 12, in both of the areas 11 and 12, or in a strip inserted beneath the shaded area 11 of Figure 2. The projections may also extend over a wider area of the film 1 or may even extend over the entire area of the film 1, although in the case of transparent film this may not be desirable since the projections may interfere to some extent with the transparency of the film and render the contents less readily visible through the film.

Referring to Figure 6A, the upper film 2 is shown provided with projections 12 which have been produced for example by pressing the film 2 between heated complementary male and female dies or tools. The lower film 3 is not provided with projections. It will be seen that passages 13 are formed between the projections 12 for the passage of air from the interior of the package to the exhausting hole 9.

Figure 7 shows the two films of Figure 6A sealed together by an annular seal 10. This sealing may conveniently be effected by means of a heated annular tool which flattens out the projections in the film 2 immediately beneath the heated tool and causes the two films 2 and 3 to be welded together as shown at 14.

In Figure 6B projections 12 are provided on the lower film 3, the upper film 2 being free from projections.

In Figure 6C, both of the films 2 and 3 are provided with projections 12.

In Figure 6D, both of the films 2 and 3 are plain, and a strip 15 of suitable material is interposed between the two films 2 and 3 in the vicinity of the site of the exhausting hole 9, the said strip being provided with projections 12.

In Figure 6E the inserted strip 15, having projections 12, is interposed between an upper film 2 having projections 12 and a plain lower film 3.

The material of the inserted strip 15 in Figures 6D and 6E may be any material capable of being caused to adhere firmly in an airtight manner to the film 2 or to both of the films 2 and 3. It may be the same material as the films 2 and 3 or, in suitable cases, it may be a strip of paper, cardboard, metal foil or other material provided with projections.

Figure 8 is an enlarged plan view of a film 1 provided with hemispherical or conical depressions 16 in its upper surface which produce corresponding projections on the underside of the film which are hemispherical as shown at 16A in Figure 9A or conical as shown at 16B in Figure 9B.

In Figures 10 and 11, the projections 17 in the film 1 are pyramidal, while in Figures 12 and 13 the projections are in the form of ridges 18.

Figures 14 to 19 indicate various configurations of projections which may be provided on the upper film and/or on the lower film and/or on an inserted strip.

In Figure 14 the projections 19 are in the form of radiating ridges; in Figure 15 the projections take the form of zig-zag ridges 20; in Figure 16 the projections are ridges of which one is a straight line 21, the remainder being curved radiating lines 22; in Figure 17 the projections are constituted by ridges each of which consists of a straight portion 23 having at each end another straight portion 24 perpendicular thereto; in Figure 18 the projections are ridges arranged as concentric semicircles 25; and in Figure 19 the projections which may be of the kind illustrated in any of Figures 8 to 11, are provided to extend over the shaded area 26.

It will be understood that the projections, when they are to be provided in the material of the package itself, may be formed at any stage prior to the evacuation of the package. Thus they may be formed at the stage represented by Figure 1 or Figure 2, or at any earlier stage, for example during the manufacture of the film itself.

Reference is made to my copending application Serial No. 339,017 titled "Production of Air-Tight Packages" filed August 24, 1951, which describes a sealing method related to the one described herein.

I claim:

1. A fluid-tight packaging process comprising the steps of forming a closed package envelope consisting of a flexible fluid-tight sheet material having a first sheet portion formed with an evacuating opening, a second sheet portion overlying the first sheet portion, and having in at least one of said sheet portions at the face thereof directed toward the other sheet portion a plurality of spacing projections forming between said overlying sheet portions a passage communicating with said opening; removing fluid from the interior of the envelope through said evacuating opening and said passage formed by said projections between said sheet portions; and then sealing said opening.

2. A fluid-tight packaging process comprising the steps of forming a closed package envelope consising of a flexible fluid-tight sheet material having a first sheet portion formed with an evacuating opening, a second sheet portion overlying the first sheet portion, and having

in said first sheet portion at the face thereof directed toward said second sheet portion a plurality of spacing projections forming between said overlying sheet portions a passage communicating with said opening; removing fluid from the interior of the envelope through said evacuating opening and said passage formed by said projections between said sheet portions; and then sealing said opening.

3. A fluid-tight packaging process comprising the steps of forming a closed package envelope consisting of a flexible fluid-tight sheet material having a first sheet portion formed with an evacuating opening, a second sheet portion overlying the first sheet portion, and having in said second sheet portion at the face thereof directed toward said first sheet portion a plurality of spacing projections forming between said overlying sheet portions a passage communicating with said opening; removing fluid from the interior of the envelope through said evacuating opening and said passage formed by said projections between said sheet portions; and then sealing said opening.

4. A fluid-tight packaging process comprising the steps of forming a closed package envelope consisting of a flexible fluid-tight sheet material having a first sheet portion overlying the first sheet portion, and having in both of said sheet portions at the faces thereof directed toward each other, respectively, a plurality of spacing projections forming between said overlying sheet portions a passage communicating with said opening; removing

fluid from the interior of the envelope through said evacuating opening and said passage formed by said projections between said sheet portions; and then sealing said opening.

5. A fluid-tight packaging process comprising the steps of forming projections in a blank of flexible, fluid-tight sheet material to provide a passage between said projections; folding one sheet portion of the blank over another sheet portion of the blank with said projections between said sheet portions and with the peripheral edges of said sheet portions contacting each other; sealing said contacting peripheral edges to each other for part of their length to form an envelope having an inlet at the unsealed part of said peripheral edges; introducing a commodity into said envelope through said inlet; sealing the remainder of said contacting peripheral edges to each other to close said inlet; piercing an evacuating opening in a part of said sheet material which communicates with said passage; removing fluid from the interior of said envelope through said passage and opening; and then sealing said opening.

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EXHIBIT B

United States Patent No. 6,212,716 to Logan, Jr., *et al.* This reference was originally entered in the record by the Examiner in a list of references cited by the Examiner (PTO-892 form) on November 2, 2006, accompanying a non-final Office Action.

US006212716B1

(12) **United States Patent**
Logan, Jr. et al.

(10) **Patent No.: US 6,212,716 B1**
(45) **Date of Patent: Apr. 10, 2001**

(54) **INFLATABLE PILLOW**

(75) Inventors: **Emanuel L. Logan, Jr.**, Columbia; **John R. Moses**, Annapolis, both of MD (US)

(73) Assignee: **Logan-Moses Enterprises An Unicorporated Business Organization**

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/188,710**

(22) Filed: **Nov. 10, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/065,413, filed on Nov. 12, 1997.

(51) **Int. Cl.**[7] **A47C 20/02**

(52) **U.S. Cl.** 5/644; 5/636; 5/655.3; 383/35; 383/63; 383/3

(58) **Field of Search** 5/636, 644, 652.2, 5/654, 655.3, 709, 420; 383/3, 33, 34, 63, 907, 104, 119, 105, 35

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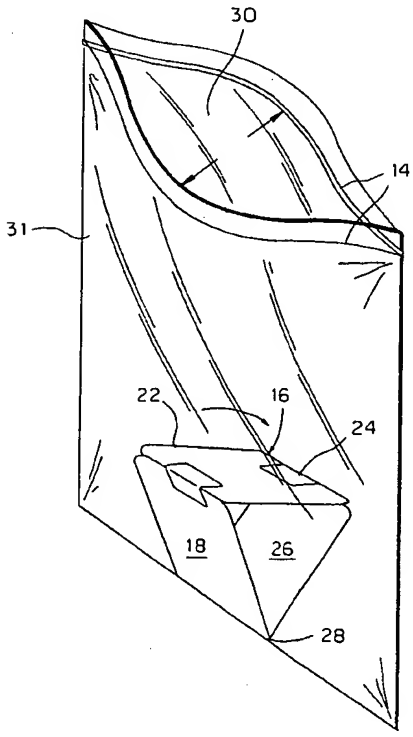
Primary Examiner—Terry Lee Melius
Assistant Examiner—James M Hewitt
(74) *Attorney, Agent, or Firm*—Millen, White, Zelano & Branigan, P.C.

(57) **ABSTRACT**

A pillow is formed from a ZIPLOC® bag by either placing a collapsible regulator within the bag which holds the walls of the bag apart when the mouth of the bag is opened or by prestressing the bag in a way that bows the walls of the bag apart, whereby when the mouth of the bag is open, air introduced into the bag is trapped therein upon again closing the bag.

6 Claims, 4 Drawing Sheets



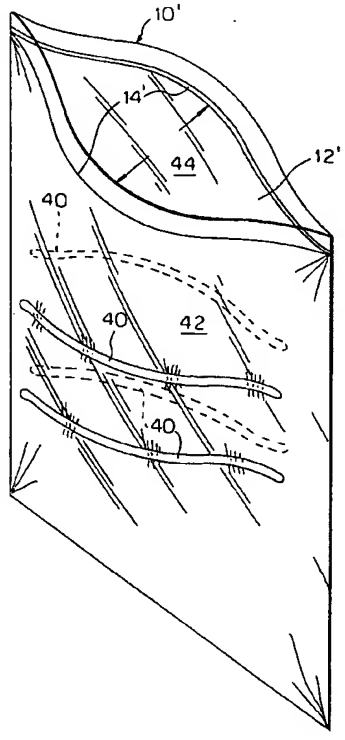


FIG. 1

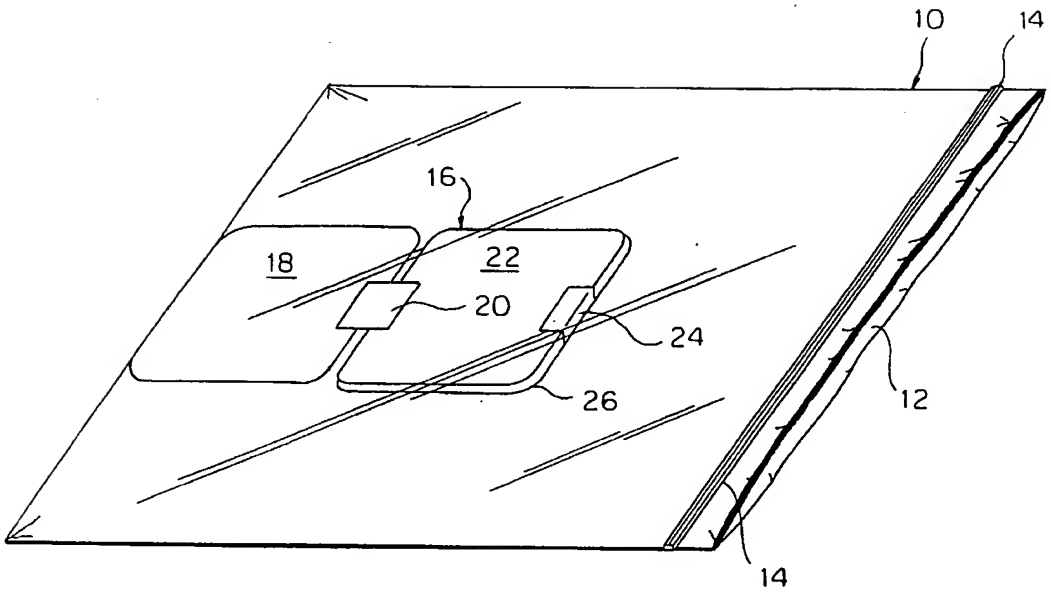


FIG. 3

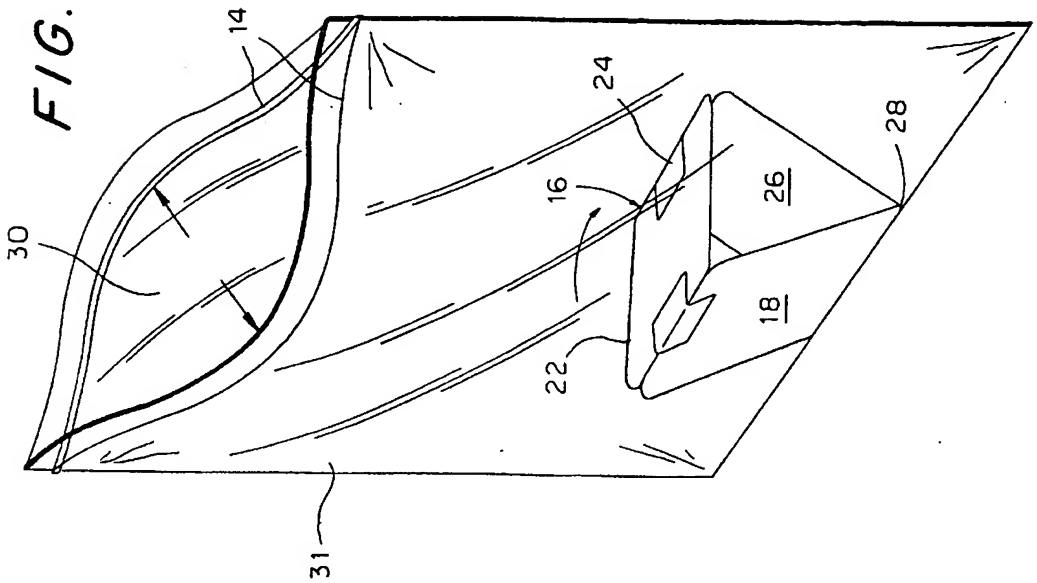


FIG. 2

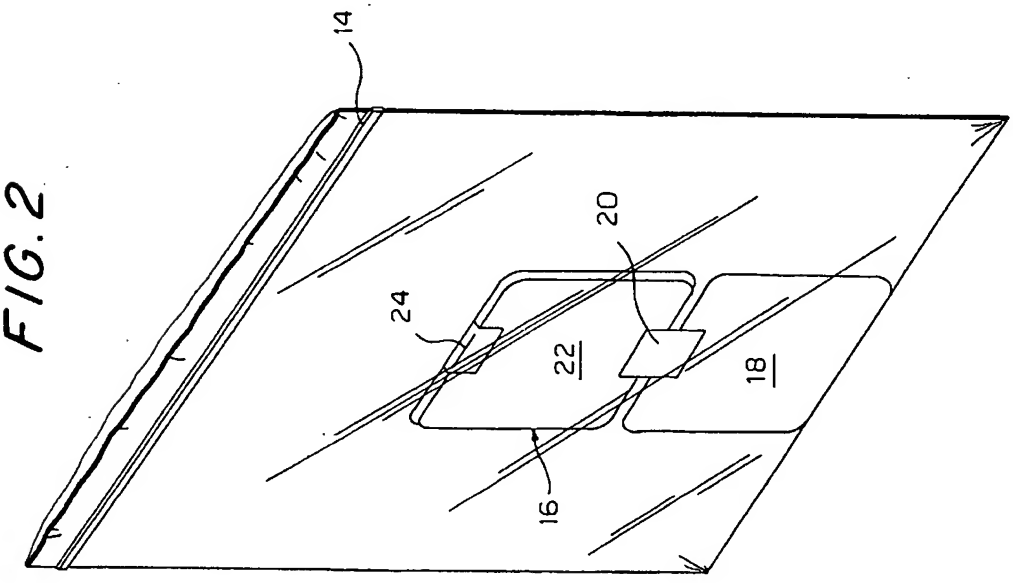


FIG. 4

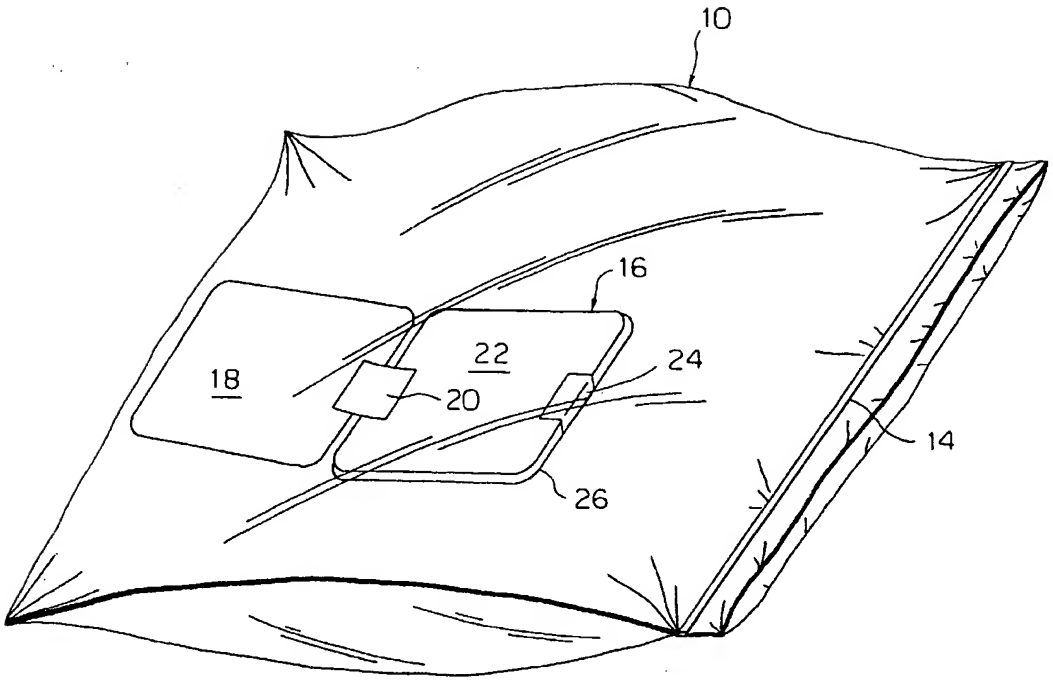


FIG. 5

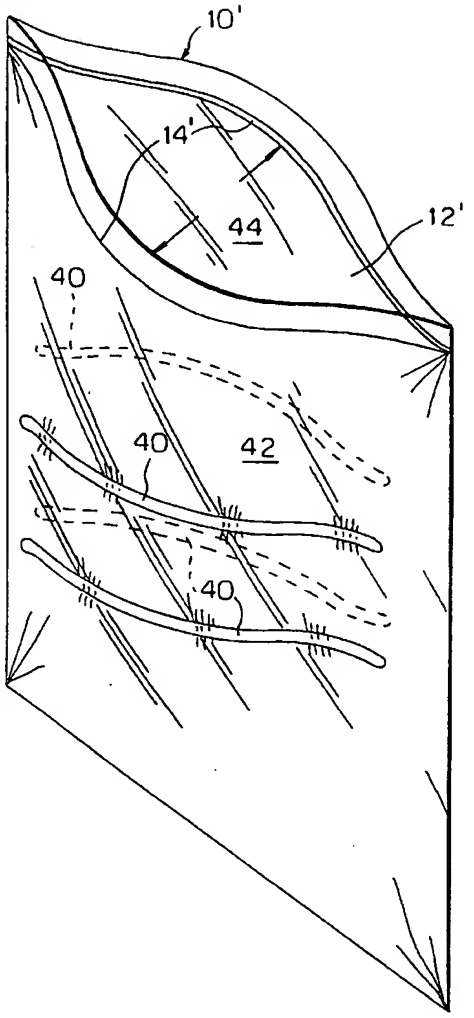
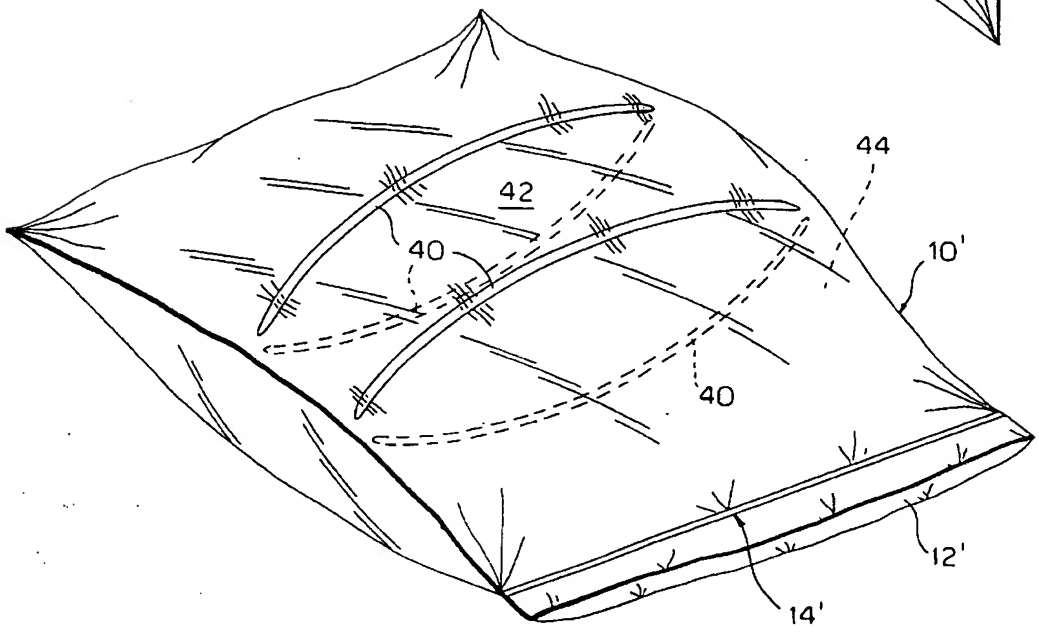


FIG. 6



INFLATABLE PILLOW

This application claims benefit of Provisional Application No. 60/065,413 filed Nov. 12, 1997.

FIELD OF THE INVENTION

The present invention relates to an inflatable pillow. More particularly, the present invention relates to an inflatable pillow which has a novel means of inflation.

BACKGROUND OF THE INVENTION

Airlines, hospital emergency rooms, campers, travelers and many other entities use pillows. If a pillow is an inflatable pillow, the normal way to inflate the pillow is to blow into a closed sac through a tube and then, in some way, constrict or plug the tube in order to keep air within the pillow. This is not a convenient or necessarily rapid way to inflate a pillow.

SUMMARY OF THE INVENTION

The present invention is directed to an inflatable pillow which utilizes a ZIPLOC® bag having a regulator therein, which regulator is normally flat. When the mouth of the bag is opened and the pillow shaken, the regulator spreads the bag so as to increase its interior volume. Thereafter, when the mouth of the bag is zipped shut a quantity of air is trapped in the bag. When the bag is tilted, the regulator falls flat and a quantity of air remains trapped in the bag so as to provide a pneumatic support.

In one aspect of the invention, the regulator is a folded relatively rigid structure disposed within the bag which pushes the sides of the bag apart by bearing on internal surfaces of the bag. In another embodiment of the invention, the bag is pre-stressed so that it opens when a force is taken off the bag by, for example, but not limited to, removing the bag from an envelope or enclosing sleeve, or by simply unfolding the bag or opening the bag.

BRIEF DESCRIPTION OF THE DRAWINGS

Various other features and attendant advantages of the present invention will be more fully appreciated as the same becomes better understood when considered in conjunction with the accompanying drawings, in which like reference characters designate the same or similar parts throughout the several views, and wherein:

FIG. **1** is a perspective view showing an uninflated bag with a regulator device inside;

FIG. **2** is a perspective view showing the bag of FIG. **1** oriented vertically in preparation to active a regulator;

FIG. **3** is a perspective view showing a regulator expanding the bag as the mouth of the bag is opened;

FIG. **4** is a perspective view showing the regulator collapsed flat when the bag is laid flat;

FIG. **5** is a perspective view of a prestressed bag with the mouth open; and

FIG. **6** is a perspective view of a prestressed bag with the mouth closed to trap air in the bag so as to form a pillow.

DETAILED DESCRIPTION

Referring now to FIG. **1**, there is shown a bag **10**, such as a ZIPLOC® bag, having a mouth **12** which is closed by a seam **14** wherein the seam is a ZIPLOC® type of seam having at least one rib which is received in at least one groove. Received in the bag is a regulator **16** which, in FIG. **1**, lies flat within the bag.

Referring now to FIGS. **2** and **3**, the regulator **16** is comprised of an attachment tab **18**, which is hinged by a hinge **20** to a regulator panel **22** that is hinged by a hinge **24** to a support arm **26**. When the mouth **12** of the bag is open by unzipping the ZIPLOC® seam **14** while the bag **10** is held in a vertical orientation as shown in FIGS. **2** and **3**, the regulator **16** expands into a triangular shape because the attachment tab **18** is adhered to the inside surface of the bag **10** and the regulator panel **22** falls until the bottom edge **28** of the support arm slides down an opposite wall **30** of the bag **10** and abuts the bottom of the attachment tab **18**. The bag **10** is therefore held open because the panel **22** forms a strut that holds the two side panels **30** and **31** apart so that regular atmospheric air under atmospheric pressure fills the bag. The ZIPLOC® seam **14** is then closed trapping air inside. When the bag is laid flat, the regulator **16** collapses and an inflated pillow results. This is the preferred embodiment of the invention.

In another embodiment of the invention, the bag **10'** is prestressed so that when it is unfolded or otherwise relieved of forces that tend to keep the bag flat, the bag will expand when the mouth **12'** is open. When the mouth is thereafter closed and sealed, air is trapped within the bag so that an inflatable pillow results. This embodiment is shown in FIGS. **5** and **6** which show stress lines or areas **40** embossed or otherwise formed in the two side panels **42** and **44** of the bag, which stress lines or areas bow the bag outwardly when pressure tending to keep the bag flat is released therefrom. While the lines or areas shown extend in the direction of the extent of the mouth, the lines **40** may extend in other directions, the structure being that structure unitary or integral with the bag **10'** opens the bag to receive a volume of air. In another embodiment, resilient bowed ribs **40'** are integral with the bag **10'** and extend in the direction of the lines or areas **40**. Ribs **40'** are incorporated into or with the panels **42** an **44** to bow the panels outwardly. When a force holding the unexpanded bag **10'** flat is moved from the bag such as, for example, by removing a folded bag from a container or envelope and unfolding the bag.

From the foregoing description, one skilled in the art can easily ascertain the essential characteristics of this invention, and without departing from the spirit and scope thereof, can make various changes and modification of the invention to adapt it to various usages and conditions.

What is claimed is:

1. An inflatable pillow for supporting an object in abutment therewith comprising:

a plastic bag having side walls, a closed bottom, a mouth sealable by a rib-in-slot airtight fastener disposed adjacent to the mouth on the side walls;

means for holding the side walls of the bag apart when the mouth of the bag is opened to introduce a quantity of air from air surrounding the bag into the bag; the holding means comprising at least one prestressed area in the side walls of the bag, the prestressed area having a bias urging the walls of the bag apart and the rib-in-slot fastener open; the rib-in-slot fastener being thereafter sealable after closing the mouth of the bag to trap the quantity of air within the bag, wherein the bag becomes a cushion useable as a pillow.

2. An inflatable pillow comprising:

a plastic bag having a closed bottom, a mouth for being held closed and sealed by a rib-in-slot airtight fastener, and side walls; and

a regulator strut hinged within the bag to move from a first position in which the regulator strut is substantially coextensive with the side walls and a second position in which the regulator strut extends transverse of the side walls to hold the side walls spaced from one another so that the bag fills with air surrounding the bag, the regulator strut being held temporarily in the second position by a collapsible support; whereby upon closing the rib-in-slot airtight fastener, a portion of the surrounding air is trapped within the bag and the collapsible support allows the regulator strut to return to the first position.

3. An inflatable pillow according to claim **2**, wherein the regulator strut is hinged to one of the side walls and wherein the support is hinged to the regulator strut.

4. An inflatable pillow according to claim **3**, wherein the support is configured as a support strut which extends from the regulator strut to the bottom of the bag.

5. An inflatable pillow according to claim **4**, further including an attachment tab which is fixed to one wall of the bag, the attachment tab having the regulator strut pivoted thereto.

6. An inflatable pillow according to claim **5**, wherein the regulator strut, support strut and attachment tab are each configured as panels.

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X. RELATED PROCEEDINGS APPENDIX

None.